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Hawley's

Condensed Chemical

Dictionary

THIRTEENTH EDITION

Revised by

Richard J. Lewis, Sr.



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thin-layer chromatography. (TLC). A micro type of chromatography. The thin layer (0.01 inch) is the adsorbent, usually a special silica gel spread on glass or incorporated in a plastic film. Single drops of the solutions to be investigated are placed along one edge of the glass plate, and this edge then dipped into a solvent. The solvent carries the constituents of the original test drops up the thin layer in a selective separation, so that a comparison with known standards and various identifying tests may be made on the spots formed.

See thin.

thinner. A hydrocarbon (naphtha) or oleoresinous solvent (turpentine) used to reduce the viscosity of paints to appropriate working consistency usually just before application. In this sense a thinner is a liquid diluent, except that it has active solvent power on the dissolved resin.

thio-. A prefix used in chemical nomenclature to indicate the presence of sulfur in a compound, usually as a substitute for oxygen.

See thiol.

thioacetamide.

CAS: 62-55-5. CH_3CSNH_2 .

Properties: Colorless leaflets. Mp 115C. Stable in solution. Soluble in water, alcohol, ether, benzene. Combustible.

Hazard: Toxic by ingestion and inhalation, a carcinogen (OSHA).

Use: To replace gaseous hydrogen sulfide in qualitative analysis.

thioacetic acid. (thiacetic acid: ethanethiolic acid).

CAS: 507-09-5. CH_3COSH .

Properties: Clear, yellow liquid; strong, unpleasant odor. D 1.05 (25C), fp -17C, bp 81.8C (630 mm Hg). Soluble in water, alcohol, and ether. Combustible.

Derivation: By heating glacial acetic acid and phosphorus pentasulfide, with subsequent distillation.

Hazard: Toxic by ingestion and inhalation.

Use: Chemical reagent, lachrymator.

thioallyl ether. See allyl sulfide.

thioanisole. $\text{C}_6\text{H}_5\text{CH}_3\text{S}$.

Properties: Colorless liquid; strong, unpleasant odor. D 1.053 (25C), fp -15.5C, bp 188C, refr index 1.5842 (25C). Insoluble in water; soluble in most organic solvents. Combustible.

Use: Intermediate, solvent for polymeric systems.

thiobenzoic acid. $\text{C}_6\text{H}_5\text{COSH}$.

Properties: Yellow oil or crystals. D 1.1825-1.1835 (20/4C), mp 24C, bp 77.5C (5 mm Hg), 122C (30 mm Hg), refr index 1.602-1.604 (20C). Insoluble in water; miscible with organic solvents. Combustible.

Grade: 95% min.

Use: Organic intermediate.

4,4'-thiobis(6-*tert*-butyl-*m*-cresol).

CAS: 96-69-5.

Properties: Light-gray to tan powder. Mp 150C min. d 1.10 (25C).

Hazard: Toxic by inhalation. TLV: 10 mg/m³ of air.

Use: Protection of light-colored rubber from oxidation and of nonstaining neoprene compounds against deterioration.

2,2'-thiobis(chlorophenol).

CAS: 97-18-7. $[\text{C}_6\text{H}_4(\text{OH})_2\text{S}]_2$.

Properties: White, crystalline solid; odorless. Mp 175.8-186.8C. Insoluble in water.

Hazard: Toxic by ingestion.

Use: Bacteriostat for cosmetics, fungicide.

2,2'-thiobis(4,6-di-*sec*-amylphenol).

(2,2'-thiobis[4,6-bis-(1-methylbutyl)phenol]).

$[(\text{CH}_3\text{CH}_2)_2\text{CH}(\text{CH}_3)_2\text{OHC}_6\text{H}_4\text{S}]_2$.

Properties: A dark, viscous liquid. Softening p 0C. d 0.99 (50C).

Use: Rubber antioxidant.

thiocarbamide. See thiourea.

thiocarbanil. See phenyl mustard oil.

thiocarbanilide. (*N,N'*-diphenylthiourea; sulfo-carbanilide).

CAS: 102-08-9. $\text{CS}(\text{NHC}_6\text{H}_5)_2$.

Properties: Gray powder. Mp 148C, d 1.32. Soluble in alcohol and ether; insoluble in water. Combustible.

Derivation: Interaction of aniline and carbon disulfide and alcohol in the presence of sulfur.

Use: Intermediates, dyes (sulfur colors, indigo, methyl indigo), vulcanization accelerator, synthetic organic pharmaceuticals, flotation agent, acid inhibitor.

thiocarbonyl chloride. See thiophosgene.

thioctic acid. See *dl*- α -lipoic acid.

thiodiethylene glycol. See thioglycol.

thiodiglycol. (thiodiethylene glycol:

β -bis-hydroxyethyl sulfide; dihydroxyethyl sulfide). $(\text{CH}_2\text{CH}_2\text{OH})_2\text{S}$.

Properties: Syrupy, colorless liquid; characteristic odor. D 1.1852 (20C), bp 283C, fp -10C, viscosity 0.652 cP (20C), flash p 320F (160C), bulk d 9.85 lb/gal, refr index 1.5217 (20C). Soluble in acetone, alcohol, chloroform, water; slightly soluble in benzene, carbon tetrachloride, and ether. Combustible.

Derivation: Hydrolysis of dichloroethyl sulfide, interaction of ethylene chlorohydrin and sodium sulfide.

Hazard: Do not use with hydrochloric acid.